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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/768,580 01/23/01 MCMAHON J 42390.P5142D

MMC1/0731
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EXAMINER

CHAMBLISS, A

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

07/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/768,580

Applicant(s)

MCMAHON, JOHN F.

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement submitted on 1/23/01 was filed before the mailing date of the non-final rejection on 7/24/01. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the petition is granted and the information disclosure statement is being considered by the examiner.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 38, 52, 80, 102, 120, 122, 130, and 134. Correction is required.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: " METHOD OF FABRICATING A STACKED CHIP PACKAGE ".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 23 and 25 recites the limitation " a second chip " in lines 2 and 1 respectively. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 23 recites the limitation " a first chip " in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 21, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kiyoshi (JP 4-219966).

With respect to Claim 21, Kiyoshi places a first chip package 4 on a first shelf, which is electrically attached to the first shelf. A second chip package 4 (i.e. the chip above the first chip package) is electrically attached to the second shelf (see English abstract and figures).

With respect to Claim 26, the first chip package 4 is wire bonded to the first shelf (see Fig. 1).

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With respect to Claim 27, the second chip package 4 is wire bonded to the second shelf by the substrate (see Fig. 1).

10. Claims 21, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu (U.S. 5,633,530).

With respect to Claim 21, Hsu places a first chip package 13a on a first shelf, which is electrically attached to the first shelf. A second chip package 13b is electrically attached to the second shelf (see Fig. 1).

With respect to Claim 26, the first chip package 13a is wire bonded to the first shelf (see Fig. 1).

With respect to Claim 27, the second chip package 13b is wire bonded to the second shelf by the substrate (see Fig. 1).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patent ability shall not be negative by the manner in which the invention was made.

11. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. 5,633,530) as applied to claim 21 above, and further in view of Chia et al. (U.S. 5,563,446).

Hsu disclose covering the package above the second chip package with a lid 16b (see Fig. 1). Hsu fails to disclose filling the package above the second chip package with an encapsulant. However, with respect to Claims 22 and 23, Chia discloses filling

the package above a chip with an encapsulant 188 or a lid 288. The encapsulant when added to the package taught by Hsu would seal the open cavity below the second shelf to protect the first chip package. Therefore, it would be obvious to use the encapsulant taught by Chia instead of the lid taught by Hsu since the encapsulant would protect the die and its wire bond leads in the same conventional manner as the lid.

12. Claim 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. 5,633,530) as applied to claim 21 above, and further in view of Wenzel et al. (U.S. 6,150,724).

Hsu discloses two semiconductor chips one above the other (see Fig. 1). Hsu fails to disclose a CPU chip package on the first shelf and a memory cache on the second shelf. However, with respect to Claim 24 and 25, Wenzel discloses semiconductor chip can be made of the same process or different process. For example, the semiconductor chip can be a CPU, SDRAM, DRAM, etc. (see col. 6 lines 60-67 and col. 7 lines 1-18). Therefore, it would have been obvious to use the CPU and SDRAM chips as taught by Wenzel in the semiconductor package taught by Hsu since the combination of the CPU and the SDRAM would provide the semiconductor package with the ability to process data and store memory.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show processes of packaging a semiconductor device which are similar to the process of the instant invention.

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Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956.



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AC

AC/July 24, 2001